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HER/ErbB Family Antibody Sampler Kit



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1 Kit (8 x 20 microliters)

For Research Use Only. Not for Use in Diagnostic Procedures.

Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source
EGF Receptor (D38B1) XP [®] Rabbit mAb	4267	20 µl	175 kDa	Rabbit IgG
HER2/ErbB2 (D8F12) XP [®] Rabbit mAb	4290	20 µl	185 kDa	Rabbit IgG
HER3/ErbB3 (D22C5) XP [®] Rabbit mAb	12708	20 µl	185 kDa	Rabbit IgG
HER4/ErbB4 (111B2) Rabbit mAb	4795	20 µl	180 kDa	Rabbit IgG
Phospho-EGF Receptor (Tyr1068) (D7A5) XP [®] Rabbit mAb	3777	20 µl	175 kDa	Rabbit IgG
Phospho-HER2/ErbB2 (Tyr1221/1222) (6B12) Rabbit mAb	2243	20 µl	185 kDa	Rabbit IgG
Phospho-HER3/ErbB3 (Tyr1289) (D1B5) Rabbit mAb	2842	20 µl	185 kDa	Rabbit IgG
Phospho-HER4/ErbB4 (Tyr1284)/EGFR (Tyr1173) (21A9) Rabbit mAb	4757	20 µl	180 kDa	Rabbit
Anti-rabbit IgG, HRP-linked Antibody	7074	100 µl		Goat

Please visit cellsignal.com for individual component applications, species cross-reactivity, dilutions, protocols, and additional product information.

Description

The HER/ErbB Family Antibody Sampler Kit provides an economical means to evaluate the HER/ErbB Family, including the phosphorylation of EGFR, HER2/ErbB2, HER3/ErbB3, and HER4/ErbB4. The control antibodies to each family member are also included. The kit contains enough antibody to perform two western blot experiments with each primary antibody.

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

Background

The epidermal growth factor (EGF) receptor is a transmembrane tyrosine kinase that belongs to the HER/ErbB protein family. Ligand binding results in receptor dimerization, autophosphorylation, activation of downstream signaling, internalization, and lysosomal degradation (1,2). The GRB2 adaptor protein binds activated EGFR at phospho-Tyr1068 (3).

The ErbB2 (HER2) proto-oncogene encodes a 185 kDa transmembrane, receptor-like glycoprotein with intrinsic tyrosine kinase activity (4). While ErbB2 lacks an identified ligand, ErbB2 kinase activity can be activated in the absence of a ligand when overexpressed and through heteromeric associations with other ErbB family members (5). Amplification of the ErbB2 gene and overexpression of its product are detected in almost 40% of human breast cancers (6). The major autophosphorylation sites in ErbB2 are Tyr1248 and Tyr1221/1222; phosphorylation of these sites couples ErbB2 to the Ras-Raf-MAP kinase signal transduction pathway (4,7).

HER3/ErbB3 is a member of the ErbB receptor protein tyrosine kinase family, but lacks tyrosine kinase activity. Tyrosine phosphorylation of ErbB3 depends on its association with other ErbB tyrosine kinases. Upon ligand binding, heterodimers form between ErbB3 and other ErbB proteins, and ErbB3 is phosphorylated on tyrosine residues by the activated ErbB kinase (8,9). There are at least 9 potential tyrosine phosphorylation sites in the carboxy-terminal tail of ErbB3. These sites serve as consensus binding sites for signal transducing proteins, including Src family members, GRB2, and the p85 subunit of PI3 kinase, which mediate ErbB-downstream signaling (10). Both Tyr1222 and Tyr1289 of ErbB3 reside within a YXXM motif and participate in signaling to PI3 kinase (11).

HER4/ErbB4, like other family members, has four ectodomains, a single transmembrane domain, and a cytoplasmic tail containing the active tyrosine kinase domain (12). By binding to neuregulins and/or EGF family ligands, ErbB4 forms either a homodimer or heterodimer with other ErbB family members, which results in receptor activation and signaling (12). ErbB4 is ubiquitously expressed with the highest expression occurring in the brain and heart. The expression of ErbB4 in breast cancer, pediatric brain cancer, and other types of carcinomas has been reported, suggesting that ErbB4 expression is involved in both normal tissue development and carcinogenesis (12).

Background References

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